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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,108	12/13/2001	Georg G. A. Bohm	P01012US1A	2477

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EXAMINER	
MAKI, STEVEN D	
ART UNIT	**PAPER NUMBER**
1733	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/022,108	BOHM ET AL.	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Baranwal

3) **Claims 1, 7 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Baranwal (US 3824206).**

Baranwal discloses a **comparative example** comprising:

providing a solution ("cement") comprising solvent and styrene butadiene polymer ("rubber") having a low molecular weight with DSV 2.2;

mixing the solution ("cement") with petroleum oil ("processing aid");

drying ("isolating") the solution ("cement") to obtain rubber comprising processing aid;

mixing the rubber comprising processing aid with carbon black in a Banbury mixer ("solid-state" mixing the rubber comprising processing aid with carbon black) to obtain a dry mix. See col. 7 lines 7-20.

The claimed process is anticipated by the comparative example disclosed by Baranwal at col. 7-20. The claimed processing aid reads on the petroleum oil.

Europe

4) **Claims 1-11 and 16-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Europe (EP 9250) in view of Schulze (US 2721185).**

Europe discloses a process for forming a free-flowing (vulcanizable) composite particles comprising:

mixing elastomeric particles ("rubber") and water to form "latex";

providing a "cocktail" by mixing nonelastomeric particles and water and adding solvent to this mixture;

mixing the "latex" and "cocktail", coagulating, filtering and drying to obtain a free-flowing powder ("premix");

dry blending the free-flowing powder ("premix") **with fillers and/or pigments**. See at least page 1 lines 9-12, page 6 lines 10-15. Europe describes suitable nonelastomeric polymers at page 4 lines 5-13.

Hence, Europe teaches a liquid state mixing step *and* a solid state mixing step of the rubber with filler and thereby substantially discloses the claimed invention except that Europe does not specifically recite using carbon black as the filler. However, it would have been obvious to one of ordinary skill in the art to use carbon black as the filler in Europe's process since Schulze teaches that carbon black is added to many vulcanizable elastomer mixes during compounding as a filler (col. 4 lines 20-21).

As to claim 1, the claimed "processing aid" reads on the nonelastomeric polymer disclosed by Europe. In any event: it would have been obvious to one of ordinary skill in the art to add a "processing aid" to Europe's "latex" (e.g. directly or indirectly via a

"cocktail") in view of Schulze's suggestion to add a "processing aid" (plasticizer) to a latex *before* solid state mixing (mixing in a Banbury mixer) to provide desired plasticizing action / softening of the rubber. See col. 1 lines 26-29, col. 4 lines 6-10, 45-66).

As to claims 2-6, note Europe's "cocktail". In any event: it would have been obvious to add a cocktail having the processing aid and a solvent in view of Europe's teaching to mix a liquid mixture with the latex and the above noted suggestion from Schulze's suggestion to add a plasticizer to a latex. The term "solvent" reads on water. As to heating (claim 3), it would have been obvious to heat the cocktail as claimed since it is taken as well known / conventional per set to improve dispersion in a liquid mixture using heat. As to claims 4-6, one of the additional plasticizers disclosed by Schulze is mineral oil. See col. 4 line 54.

As to claim 7, Europe teaches drying.

As to claim 8, it would have been obvious to mix within a mixer having a net mixing chamber volume of at least 75 L operated at a fill factor of at least about 50 depending on the desired amount product to be formed since (1) Europe teaches dry blending the free flowing rubber with filler and then forming a useful shape / article and optionally (2) it is taken as well known / conventional per se to conduct mixing in a mixer of desired size.

As to claims 9-11, the nonelastomeric particles may be resin particles. Also, one of the additional plasticizers disclosed by Schulze is fatty acid. See col. 4 line 54. As to claims 10-11, it would have been obvious to use fatty acid (claim 10) / mixture of zinc

fatty acid salts (claim 11) for the processing aid since (1) Schultz teaches using processing aids such as fatty acids and (2) each of fatty acid and mixture of zinc fatty acid salts is taken as a well known / conventional processing aid per se in the rubber compounding art.

As to claim 16, it would have been obvious to shape and cure the composition in view of (1) Europe's teaching to form a useful article from the blend of rubber and filler and (2) Schultz's suggestion to form a tire tread from a vulcanizable composition comprising rubber and carbon black (co. 5 lines 36-48).

As to claims 17 and 18, the claimed amount of processing aid would have been obvious and could have been determined without undue experimentation in view of Europe's teaching to use 0.5-8 weight% elastomeric particles ("processing aid") or Schultz's suggestion to use 1-10 parts plasticizer (processing aid).

5) **Claims 2-6 rejected under 35 U.S.C. 103(a) as being unpatentable over Europe in view of Schulze as applied above and further in view of Baranwal (US 3824206).**

As to claims 2-6, it would have been obvious to one of ordinary skill in the art to use a processing aid as suggested by Schulze in a cocktail as claimed for Europe's process in view of Baranwal et al's teaching to facilitate dispersion of an additive in the water or solvent in which the rubber is dispersed by dispersing the additive in a small volume of water or solvent as is conventional in making up such mixes (col. 5 lines

34-38). As to heating (claim 3), it would have been obvious to heat the cocktail as claimed since it is taken as well known / conventional per set to improve dispersion in a liquid mixture using heat.

6) **Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Europe in view of Schulze as applied above and further in view of Lawson et al (US 5332810).**

As to claims 12-15, it would have been obvious to use the claimed functionalized rubber as the rubber in Europe's process in view of Lawson et al's teaching of a functionalized rubber having a predictable molecular weight range for mixing with carbon black.

Paton et al

7) **Claims 1-11 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paton et al (US 2617782) in view of at least one of Schulz and Baranwal.**

Paton et al teaches mixing crude rubber, carbon black, vulcanizing and accelerating agents in a Banbury mixer. Hence, Paton et al teaches solid state mixing rubber and carbon black. Paton et al dos not recite premixing the rubber with a processing aid

As to claim 1, it would have been obvious to one of ordinary skill in the art to add a "processing aid" to a cement or latex comprising rubber and water or solvent, dry the resulting mixture to form a premix comprising rubber and the processing aid and then solid state mix the premix with carbon black in the Banbury mixer in view of (1) Paton et

al's teaching to solid state mix rubber and carbon black in a Banbury mixer and (2) the suggestion from at least one of Schulze (col. 4 lines 5-, 45-67) and Baranwal (col. 2 line7-26) to add a processing aid (e.g. fatty acid, oil) to a latex / solution comprising rubber *before* mixing in an Banbury mixer / internal mixer.

As to claims 2-6, it would have been obvious to one of ordinary skill in the art to use the processing aid in a cocktail as claimed in view of Baranwal et al's teaching to facilitate dispersion of an additive in the water or solvent in which the rubber is dispersed by dispersing the additive in a small volume of water or solvent as is conventional in making up such mixes (col. 5 lines 34-38). As to heating (claim 3), it would have been obvious to heat the cocktail as claimed since it is taken as well known / conventional per set to improve dispersion in a liquid mixture using heat.

As to claim 7, Schulz / Baranwal teach drying.

As to claim 8, it would have been obvious to mix within a mixer having a net mixing chamber volume of at least 75 L operated at a fill factor of at least about 50 depending on the desired amount product to be formed since (1) Paton et al teaches mixing the rubber and carbon black in a Banbury mixer and optionally (2) it is taken as well known / conventional per se to conduct mixing in a mixer of desired size.

As to claims 9-11, one of the additional plasticizers disclosed by Schulze is fatty acid. See col. 4 line 54. As to claims 10-11, it would have been obvious to use fatty acid (claim 10) / mixture of zinc fatty acid salts (claim 11) for the processing aid since (1) Schultz teaches using processing aids such as fatty acids and (2) each of fatty acid

and mixture of zinc fatty acid salts is taken as a well known / conventional processing aid per se in the rubber compounding art.

As to claim 16, it would have been obvious to shape and cure the composition in view of Schultz's suggestion to form a tire tread from a vulcanizable composition comprising rubber and carbon black (co. 5 lines 36-48).

As to claims 17 and 18, the claimed amount of processing aid would have been obvious and could have been determined without undue experimentation in view of Schultz's suggestion to use 1-10 parts plasticizer (processing aid).

8) **Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paton et al (US 2617782) in view of at least one of Schulz and Baranwal as applied above and further in view of Lawson et al (US 5332810).**

As to claims 12-15, it would have been obvious to use the claimed functionalized rubber as the rubber in Paton et al's process in view of Lawson et al's teaching of a functionalized rubber having a predictable molecular weight range for mixing with carbon black.

Remarks

9) Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

The prior art rejection using Japan 426 has been withdrawn in view of the amendment to claim 1.

With respect to solid-state mixing, note the new ground of rejection using Baranwell / Europe / Paton et al.

10) No claim is allowed.

11) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
October 16, 2005

Steven D. Maki 10-16-05
STEVEN D. MAKI
PRIMARY EXAMINER